

## **SUBSTITUTE SPECIFICATION**

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### **CLAIMS**

#### What is claimed is:

1. A fatty acid ester of pentaerythritol, a pentaerythritol oligomer, or mixtures thereof, wherein the fatty acid has 6 to 22 carbon atoms, and wherein the ester contains less than 0.3% by weight C<sub>17</sub> fatty acid acyl groups and has a melting point of at least 30°C.
2. The fatty acid ester according to Claim 1, wherein the fatty acid ester is pentaerythritol and has a percentage content of (a) from about 5 to about 35% by weight monoesters, (b) from about 20 to about 50% by weight diesters, and (c) from about 25 to about 50% by weight triesters.
3. The fatty acid ester according to Claim 1, wherein the fatty acid ester is obtained by esterification of pentaerythritol, a pentaerythritol oligomer, or mixtures thereof with a fatty acid present as a mixture containing from about 40% to about 50% by weight of a C<sub>16</sub> fatty acid and from about 45% to about 55% by weight of a C<sub>18</sub> fatty acid.
4. The fatty acid ester according to Claim 2, with a percentage content of (a) from about 10% to about 25% by weight monoesters, (b) from about 25% to about 40% by weight diesters, and (c) from about 30% to about 45% by weight triesters.
5. The fatty acid ester according to Claim 2, with a percentage content of (a) from about 12% to about 19% by weight monoesters, (b) from about 25% to about 35% by weight diesters, (c) from about 30% to about 40% by weight triesters, and (d) from about 6 to about 11% by weight tetraesters.
6. A process for the production of a C<sub>16</sub>/C<sub>18</sub> fatty acid pentaerythritol ester

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comprising the steps of:

(A) providing about 1.8 to about 2.2 mol of a fatty acid mixture per mol of pentaerythritol wherein the fatty acid mixture comprises from about 40% to about 50% by weight of a C<sub>16</sub> fatty acid and from about 45% to about 55% by weight of a C<sub>18</sub> fatty acid;

(B) esterifying component (A) at temperatures ranging from about 180°C to about 250°C in an inert gas atmosphere in the absence of solvent to form a reaction mixture;

(C) stirring the reaction mixture *in vacuo* until it has an acid value of less than 1 and an OH value of 145 to 158.

7. The process according to Claim 6, wherein water formed in the reaction mixture of step (B) is removed by distillation.

8. The process according to Claim 6, wherein unreacted pentaerythritol of step (C) is removed by filtration.

9. The process according to Claim 6, further comprising the step of treating the reaction mixture with hydrogen peroxide.

10. The process according to Claim 6, wherein the fatty acid mixture is derived from vegetable material.

11. A cosmetic and/or pharmaceutical composition comprising an ester formed by esterification of pentaerythritol, a pentaerythritol oligomer, or mixtures thereof with C<sub>6-22</sub> fatty acids, wherein the ester contains less than 0.3% by weight C<sub>17</sub> fatty acid acyl groups and has a melting point of at least 30°C.

12. The composition according to Claim 11, wherein the ester comprises (a)

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from about 5 to about 35% by weight monoesters, (b) from about 20 to about 50% by weight diesters, and (c) from about 25 to about 50% by weight triesters.

13. The composition according to Claim 11, wherein the C<sub>6-22</sub> fatty acid is present as a mixture and comprises from about 40% to about 50% by weight of a C<sub>16</sub> fatty acid and from about 45% to about 55% by weight of a C<sub>18</sub> fatty acid.

14. The cosmetic composition according to Claim 11, wherein the ester is present in a quantity of from about 0.1% to about 20% by weight.

15. The cosmetic composition according to Claim 11, further comprising a wax component.

16. The cosmetic composition according to Claim 15, wherein the wax component is selected from the group consisting of C<sub>12-24</sub> fatty alcohols and C<sub>12-24</sub> partial glycerides.

17. The cosmetic composition according to Claim 11, further comprising at least one nonionic surfactant.

18. The cosmetic composition according to Claim 17, wherein the nonionic surfactant is selected from the group consisting of alkyl and alkenyl oligoglycosides.

19. The cosmetic composition according to Claim 11, further comprising at least one oil component which is liquid at 25°C.

20. The cosmetic composition according to Claim 11, comprising:  
(a) from about 0.1% to about 10% by weight of the ester;

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- (b) from about 1% to about 25% by weight of at least one oil component which is liquid at 25°C;
- (c) from about 0.1% to about 5% by weight of a C<sub>12-24</sub> fatty alcohol, a C<sub>12-14</sub> partial glyceride, and mixtures thereof;
- (d) from about 0.5% to about 10% by weight of a C<sub>8-24</sub> alkyl oligoglucoside; and
- (e) water.